IN THE CLAIMS:

The text of all pending claims is set forth below for the convenience of the Examiner.

1. (PREVIOUSLY PRESENTED) A method of generating mesh data, comprising:

forming grid lines orthogonally crossing each other over a target object;

forming cube data from mesh data obtained by dividing the target object by the grid lines, the cube data being formed of cube elements that are mesh elements forming the target object, wherein the cube data is obtained by determining whether each of mesh elements forming the mesh data forms the target object based on a first condition of the target object in the mesh element; and

reducing the cube elements in number by combining the cube elements in accordance with a second condition selected from a group of second conditions consisting of preventing a change of a shape of the target object formed of the cube data, preserving a substantial shape of the target object formed of the cube data, preventing a substantial change of a total volume of the combined cube elements, preserving the total volume of the combined cube elements, and maintaining an aspect ratio of surfaces of each of composite cube elements created by combining the cube elements within a predetermined range.

2. (CANCELLED).

3. (PREVIOUSLY PRESENTED) The method as claimed in claim 1, wherein the first condition of the target object in the mesh element is a ratio of volume of the target object in the mesh element to volume of the mesh element.

4. (PREVIOUSLY PRESENTED) The method as claimed in claim 1, wherein said second condition is preventing the change of the shape of the target object formed of the cube data.

5. (PREVIOUSLY PRESENTED) The method as claimed in claim 1, wherein said second condition is preserving the substantial shape of the target object formed of the cube data.

6. (PREVIOUSLY PRESENTED) The method as claimed in claim 1, wherein said second condition is preventing a substantial change of the total volume of the cube elements.

7. (PREVIOUSLY PRESENTED) The method as claimed in claim 1, wherein said second condition is that the combining of the cube elements preserves the substantial total volume of the cube elements .

8. (PREVIOUSLY PRESENTED) The method as claimed in claim 1, wherein said second condition is maintaining the aspect ratio of each of the surfaces of each of the composite cube elements within a predetermined range.

9. (ORIGINAL) The method as claimed in claim 8, wherein:

each of the composite cube elements has a rectangular parallelepiped shape; and

the aspect ratio of each of the surfaces of each of the composite cube elements is a ratio of a length of a first side to a length of a second side of the surface, the first and second sides being orthogonal to each other.

10. (ORIGINAL) The method as claimed in claim 1, wherein the grid lines partitioning the cube elements are reduced in number as the cube elements are combined to be reduced in number.

11. (PREVIOUSLY PRESENTED) A program embodied in a computer readable medium for causing a computer to execute a method of generating mesh data, the method comprising:

forming grid lines orthogonally crossing each other over a target object;

forming cube data from mesh data obtained by dividing the target object by the grid lines, the cube data being formed of cube elements that are mesh elements forming the target object; and

reducing the cube elements in number by combining the cube elements in accordance with a predetermined condition selected from a group of predetermined conditions consisting of preventing a change of a shape of the target object formed of the cube data, preserving a substantial shape of the target object formed of the cube data, preventing a substantial change of a total volume of the combined cube elements, preserving the total volume of the combined cube elements, and maintaining an aspect ratio of surfaces of each of composite cube elements created by combining the cube elements within a predetermined range.

12. (PREVIOUSLY PRESENTED) A computer-readable recording medium storing a

program for causing a computer to execute a method of generating mesh data, the method comprising:

forming grid lines orthogonally crossing each other over a target object;

forming cube data from mesh data obtained by dividing the target object by the grid lines, the cube data being formed of cube elements that are mesh elements forming the target object; and

reducing the cube elements in number by combining the cube elements in accordance with a predetermined condition selected from a group of predetermined conditions consisting of preventing a change of a shape of the target object formed of the cube data, preserving a substantial shape of the target object formed of the cube data, preventing a substantial change of a total volume of the combined cube elements, preserving the total volume of the combined cube elements, and maintaining an aspect ratio of surfaces of each of composite cube elements created by combining the cube elements within a predetermined range.

13. (PREVIOUSLY PRESENTED) An apparatus for generating mesh data, comprising:

a setting part forming grid lines orthogonally crossing each other over a target object;

a calculation part obtaining cube data from mesh data obtained by dividing the target object by the grid lines, the cube data being formed of cube elements that are mesh elements forming the target object; and

a combining part combining the cube elements of the cube data in accordance with a predetermined condition selected from a group of predetermined conditions consisting of preventing a change of a shape of the target object formed of the cube data, preserving a substantial shape of the target object formed of the cube data, preventing a substantial change of a total volume of the combined cube elements, preserving the total volume of the combined cube elements, and maintaining an aspect ratio of surfaces of each of composite cube elements created by combining the cube elements within a predetermined range.

14. (PREVIOUSLY PRESENTED) A method of generating mesh data, comprising:

dividing a target object into a plurality of first elements using an orthogonal grid, each first element corresponding to first data; and

combining the plurality of first elements according to a predetermined condition to generate a plurality of second elements, each second element corresponding to second data, wherein a number of the second elements is smaller than a number of the first elements.

15. (PREVIOUSLY PRESENTED) A method of thermal fluid analysis of a target object by generating mesh data, the method comprising:

forming grid lines orthogonally crossing each other over a target object;

forming cube data from mesh data obtained by dividing the target object by the grid lines, the cube data being formed of cube elements that are mesh elements forming the target object; and

reducing the cube elements in number by combining the cube elements in accordance with a predetermined condition.